VZ200/300 Quick Reference Card

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Memory Map

Address		Description
Dec	Hex	
0	0	BASIC Rom *(Level II Standard)*
8192	2000	BASIC Rom *(VZ Extensions)*
16384	4000	Reserved for Cartridges *(DOS, Word Pro, Terminal, RTTY)*
26624	6800	Memory Mapped I/O *(Keyboard, Cassette, Screen, Speaker)*
28672	7000	Video Display Ram
30720	7800	Communications Region *(See Page 2)*
31465	7AE9	Start of User Memory
36864	9000	End of 6K System *(VZ200)*
44874	AF4A	End of 16K System with DOS *(VZ300)*
45184	B800	End of 16K System, No DOS *(VZ300)*
53038	CF2E	End of 24K System with DOS *(VZ200 + 16K)*
53348	D000	End of 24K System, No DOS *(VZ200 + 16K)*
63138	F6A2	End of 32K System with DOS *(VZ300 + 16K)*
63488	F800	End of 32K System, No DOS *(VZ300 + 16K)*
65525	FEC9	End of 64K System with DOS *(VZ + 64K)*
65535	FFFF	End of 64K System, No DOS *(VZ + 64K)*

Port & Memory Mapped External Devices

Port *(Hex)*	Memory Addr *(Hex)*	Description
00 - 0F	-	Printer Interface *(Input/Output)*
01	-	8 Bit General Port *(Input Only)*
10 - 1F	-	Disk Controller *(Input/Output)*
20 - 2F	- 7000 - 77FF	Joystick *(Input Only)* Super Graphics *(Output Only)*
30 - 3F	?	Communications
40 - 4F	?	Light Pen *(Input Only)*
50 - 5F	-	Real Time Clock *(Proposed)*
60 - 6F	-	External Keyboard *(Input/Output)*
70 - 7F	C000 - FFFF	Main Memory Bank Switch *(Output Only)*
C9 - CA	?	Eprom Programmer
D8 - E7	8000 - 9FFF	Auto Boot *(Proposed)*
E8 - F7	6000 - 67FF	RDOS *(Proposed)*
F0 - F3	?	24 Bit I/O Interface
F8 - FF	4000 - 5FFF	Ram Disk *(Proposed)*
E0 - FF	?	D. Newcombes Rom Board
FE	?	4K-64K Ram/Eprom

Communications Region

Address		Description
Dec	Hex	
30720	7800	RST Instruction Vectors
30741	7815	Keyboard Device Control Block
30749	781D	Video Device Control Block
30757	7825	Printer Device Control Block
30774	7836	Keyboard Work Area
30779	783B	Copy of Output Latch/Video Background (3*2 = Green, 48 = Buff)*
30845 - 7	787D - F	Interrupt Exit
30862 - 3	788E - F	USR Subroutine Address
30864 - 6	7890 - 2	RND Number Seed
30874	789A	Error Code Storage. *(See Page 4)*
30876	789C	Output Device *(0 = Video, 1 = Printer, 255 = Cassette)*
30880 - 1	78A0 - 1	BASIC Stack Address/ Lower Boundary of String Space
30882 - 3	78A2 - A3	Current BASIC Line N^{o}/ Address of line with Error
30884 - 5	78A4 - 5	Start of Program Pointer
30886	78A6	Cursor Tab Position
30895	78AF	Variable Type in WRA1 *(2 = Integer, 3 = String, 4 = Sng Precison, 8 = Dbl Precision)*
30897 - 8	78B1 - 2	Top of Memory Pointer
30938 - 9	78DA - B	Line N^{o} of Last Data statement read
30954 - 5	78EA - B	Line N^{o} in which error occurred.
30969 - 70	78F9 - A	End of BASIC Program Pointer/ Start of SimpleVariables Table Pointer
30971 - 2	78FB - C	Start of DIM Variables Table Pointer
30973 - 4	78FD - E	Start of Free Memory Pointer
30975 - 6	78FF - 900	Pointer to Data Item Read
30977-1002	7901 - 1A	Variable Declaration Table *(26 Entries)*
31003	791B	Trace Flag *(0 = Off, 1 = On)*
31004 - 57	791C - 51	Reserved for Numeric Routines. e.g. Working Register Areas *(WRA1 & 2)*
31058 - 204	7952 - E4	Level II BASIC and DOS Exits. *(Unused on standard VZ200/300)*

DOS Reserved Memory Area *(Top 310 Bytes)*

Offset		Description
Dec	Hex	
0 - 66	00 - 39	Vectors *(See Page3)*
67 - 76	43 - 4C	Sector Header *(GAP2)*
77 - 204	4D - CC	Sector Data Buffer
205 - 206	CD - CE	Sector Checksum Storage
207 - 230	CF - E6	Unused (?)
231 - 310	E7 - 136	Track Map Buffer

DOS Vector Description *(pointed to by IY Regs)*

Offset		Description
Dec	Hex	
0	0	File Control Block N^{o} *(0 = FCB1, 1 = FCB2)*
1 - 8	1	Filename
9	9	Required File Type/Found File Type
11	0B	Selected Drive Pattern *(00H = Drive1, 80H = Drive2)*
12	0C	**Open** Requested Mode *(0 = Read, 1 = Write)*
13	0D	Source Drive for **Dcopy**
14 - 15	0E - 0F	User Buffer Address
16	10	Destination Drive for **Dcopy**
17	11	User Specified Sector Number
18	12	User Specified Track Number
19	13	Retry Count
20	14	Current Track Number
21	15	Next Sector Number
22	16	Next Track Number
23 - 35	17 - 23	File Control Block 1 *(FCB1)*
36 - 48	24 - 30	File Control Block 2 *(FCB2)*
49 - 50	31 - 32	Pointer to Data Buffer
51	33	Copy of I/O Latch
52 - 53	34 - 35	Pointer to Track/Sector Map
54	36	Track Count for **Dcopy**
55	37	Track Pointer for **Dcopy**
56	38	Stepper Phase
57 - 66	39 - 42	Reserved for Future Expansion

File Control Block Description

Offset		Description
Dec	Hex	
0	00	In Use Flag *(0 = Not in Use, 1 = In Use)*
1	01	**Open** Status *(0 = Read, 1 = Write)*
2 - 10	02 - 0A	Filename
11	0B	Track Number
12	0C	Sector Number
13	0D	Entry in Sector

Common File Types

T	Basic Editor File	
B	Binary File	
D	Sequential Access Program Data File	
F	Quickwrite Document	
A	Russell Harrison's Edit Ass. File	
S	Dave Mitchell/Mark Hardwood Edit Ass. File	Start Addr A280H
S	Quickwrite/Diskops System File/Label	Except Above
W	Edit Ass. with Diskops File	Start Addr A813H
W	E & F Word Pro with Patch 3.3 File	End Addr D000H
W	Russell Harrison Word Pro File	Except above two

Standard Dos Internal Error Codes

Error Code	Description
0	No Error
1	Syntax Error
2	File Already Exists
3	Directory Full
4	Disk Write Protected
5	File Not Open
6	Disk I/O Error
7	Disk Full
8	File Already Open
9	Sector Not Found
10	Checksum Error
11	Unsupported Device
12	File Type Mismatch
13	File Not Found
14	Disk Buffer Full
15	Illegal Read
16	Illegal Write
17	Break

Basic Facts

Item	Range Limits
Integer Variable	-32768 to 32767
Single Precision Variable	-1.701411E±38 to 1.701411E±38
Double Precision	-1.701411834544556D±38 to 1.701411834544556D±38
Character String	0 to 255 bytes
Line Number	0 to 65529
Coded Line Length	0 to 64 bytes

Item	Minimum Memory Required (Storage)
Source Line	5 bytes
Reserved Word	1 byte
Operator	1 byte
Variable Name	2 bytes
Special Character	1 byte
Constant Character	1 byte

Item	Minimum Memory Required (Execution)
Integer Variable	5 bytes
Single Precision Variable	7 bytes
Double Precision Variable	11 bytes
String Variable	6 bytes
Array Variable	12 bytes
For-Next Loop	16 bytes
Gosub	6 bytes
Parens Plus Value	16 bytes

Level II Error Codes & Messages

Error Code	Description
0	Next Without For Error
2	Syntax Error
4	Return Without Gosub Error
6	Out of Data Error
8	Function Code Error
10	Overflow Error
12	Out of Memory Error
14	Undef'd Statement Error
16	Bad Subscript Error
18	Redim'd Array Error
20	Division by Zero Error
22	Illegal Direct Error
24	Type Mismatch Error
26	Out of Space Error
28	String too Long Error
30	Formula too Complex Error
32	Can't Cont Error
34	No Resume Error
36	Resume Without Error
38	Unprintable Error
40	Missing Operand Error
42	Bad File Data Error
44	Disk Command?Syntax Error

Standard VZ Internal Codes

Dec	Hex	BASIC Keyword	Exits to BASIC?
128	80	END	Jumps to BASIC
129	81	FOR	No
130	82	RESET	No
131	83	SET	No
132	84	CLS	No
135	87	NEXT	No
136	88	DATA	No
137	89	INPUT	Yes*
138	8A	DIM	No
139	8B	READ	No
140	8C	LET	No
141	8D	GOTO	No
142	8E	RUN	No
143	8F	IF	No
144	90	RESTORE	No
145	91	GOSUB	No
146	92	RETURN	No
147	93	REM	No
148	94	STOP	Jumps to BASIC
149	95	ELSE	No
150	96	COPY *(VZ Extension)*	Yes
151	97	COLOR*(VZ Extension)*	No
152	98	VERIFY *(VZ Extension)*	Yes
156	9C	CRUN *(VZ Extension)*	Yes

157	9D	MODE *(VZ Extension)*	No
158	9E	SOUND *(VZ Extension)*	Yes
160	A0	OUT	No
175	AF	LPRINT	No but corrupts output
177	B1	POKE	No
178	B2	PRINT	No
179	B3	CONT	Immediate Mode Only
180	B4	LIST	Jumps to BASIC
181	B5	LLIST	Jumps to BASIC
184	B8	CLEAR	No
185	B9	CLOAD *(VZ Extension)*	Yes
186	BA	CSAVE *(VZ Extension)*	Yes
187	BB	NEW	Clears Program Area
188	BC	TAB	No
189	BD	TO	No
191	BF	USING	No
193	C1	USR	No
198	C6	POINT	No
201	C9	INKEY$	Yes*
202	CA	THEN	No
203	CB	NOT	No
204	CC	STEP	No
205	CD	+	N/A
206	CE	-	N/A
207	CF	*	N/A
208	D0	/	N/A
209	D1	^	N/A
210	D2	AND	No
211	D3	OR	No
212	D4	>	N/A
213	D5	=	N/A
214	D6	<	N/A
215	D7	SGN	No
216	D8	INT	No
217	D9	ABS	No
219	DB	INP	No
221	DD	SQR	No
222	DE	RND	No
223	DF	LOG	No
224	E0	EXP	No
225	E1	COS	No
226	E2	SIN	No
227	E3	TAN	No
228	E4	ATN	No
229	E5	PEEK	No
243	F3	LEN	No
244	F4	STR$	No
245	F5	VAL	No
246	F6	ASC	No
247	F7	CHR$	No
248	F8	LEFT$	No
249	F9	RIGHT$	No
250	FA	MID$	No